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CRISIS-EXPECTANT PLANNING FOR CRISIS RELOCATION

Final Summary Report

by
William W. Chenault

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For
Federal Emergency Management Agency
Washington, D.C. 20472

Final Report—October 1981
Contract DCPA-01-78-C-0193
Work Unit 4821G

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Federal Emergency Management Agency
Washington, D.C. 20472
COTR: Ralph B. Swisher

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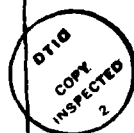
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<p>The report summarizes the development of "crisis expectant", emergency management planning for the crisis relocation of the American population during international crises. Crisis-expectant planning is examined in relation to this contract's previously reported work in (1) implications of greater population dispersal for Reception/Care planning; (2) refinements in the Organizational Relocation concept originated by the author; (3) the analysis of crash evacuation planning efforts at Three Mile Island, and (4) several Emergency Management Institute Symposia which disseminated information about Reception/Care, Organizational-Relocation, and crisis-expectant planning concepts. Emergency Management implications of crisis-expectant planning are outlined.</p>		

CRISIS-EXPECTANT PLANNING FOR CRISIS RELOCATION

TABLE OF CONTENTS

Earlier Reports and Products	
Prepared under Contract DCPA-01-78-C-0193	vi
EXECUTIVE SUMMARY.....	1
Crisis-Expectant Planning	1
Reasons for Crisis-Expectant Planning.....	2
The "Window of Opportunity".....	2
Defining Civil Defense Requirements: Impacts of Crisis Relocation Planning	3
Project Tasks.....	5
Implications of the Crisis-Expectant Concept for Emergency Management	6
DEVELOPMENT OF THE CRISIS-EXPECTANT PLANNING CONCEPT.....	7
Project History and Overview	7
Emergency and Implications of the Crisis Relocation Option	9
Reception/Care Organization for Host Communities.....	13
Host Area Organization.....	14
Reception/Care Organization	15
Staffing Implications.....	16
Organizational Relocation.....	19
Phased Development of Organizational Relocation Plans.....	21
Reception/Care Refinements for Wider Dispersal of Evacuees	21

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Executive Summary

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**CRISIS-EXPECTANT PLANNING
FOR
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Executive Summary

Preparations for civil defense against a nuclear threat will not be adequately supported or financed except during periods of severe crisis, when the country's leadership and general public have come to perceive an imminent threat or distinct possibility of attack. This assumption, which reflects the overwhelming weight of the historical and psychological evidence, prompts difficult questions about how we can best prepare to mobilize the civil defense energies and resources that would become available only after crisis conditions are widely recognized.

Crisis-Expectant Planning

The concept of "crisis expectant" civil defense planning represents an attempt to project and prepare for a phased mobilization of civil defense capabilities as public attitudes would permit, and eventually demand, such a mobilization. The concept, *per se*, is not a novel one. Governments traditionally maintain contingency plans for a wide range of potential crises, disasters, and wars. In the context of civil defense, however, such plans must reflect the critical elements that distinguish an effective civil preparedness buildup from the mobilization of conventional military and industrial systems. These elements are numerous, but they largely reflect the need for the support, knowledgeable participation, and organization of the "public" or the "general population."

A nationwide civil defense operation—a move to shelter, or an evacuation followed by sheltering—would in fact be *implemented* by virtually the entire population. On a scale without precedent, masses of people (under severe stress) must engage in specific life-saving activities, many of them unfamiliar and all of them performed in

essentially unfamiliar circumstances. And the organization required to do this—to allocate 145 million people across host communities, to allocate each community of “hosts” and “evacuees” among protective shelters, and so on—that organization will exist only on paper and without staff until such time as public concern leads to voluntary participation or a significantly enhanced governmental program.

Clearly, this civil defense mobilization is different in kind as well as in scale from more conventional mobilization efforts. The public itself must perform appropriate, timely, integrated, and organized activity. For any given segment of the public, people can be educated, recruited, oriented, and trained only *after* their attitudes have shifted dramatically toward an appreciation of the danger and the need. Crisis-expectant planning, therefore, must be concerned with anticipating shifts in public attitudes, identifying interested populations, communicating with these populations, and the process by which people are led from public education, through job/task training, into appropriate volunteer slots in a civil defense organization which emerges as a crisis condition develops.

Reasons for Crisis-Expectant Planning

The three principal considerations that have given rise to the crisis-expectant concept are (1) the prospect of a superior Soviet position in the 1980s, contrasted with (2) the possibility of continued minimal funding for American civil defense, and most importantly, (3) a sharpened awareness of the complexity of civil defense operating requirements in a Crisis Relocation.

The “Window of Opportunity”

Through the 1980s and perhaps for a long time to come, an increasingly powerful Soviet strategic force will be facing a relatively diminished triad of major U.S. weapons systems. The resulting “opportunity” for Soviet initiatives, it is widely assumed, poses the prospect of our negotiating through international crises from a

position of parity or inferiority in offensive systems. Under such circumstances, the relative civil defense capabilities of the superpowers (both real and perceived) could become an important factor in negotiations or war.

Funding

Both the availability and the optimal use of funds must be considered. It is inconceivable that America's leadership or the public, under normal conditions, would provide an estimated \$60-100 billion program of 100 psi single-purpose blast shelters that would be considered adequate. Given that budgets over the decade could be less than five percent of that amount, what is the best allocation of the current meager annual investment in civil defense? From the perspective of crisis-expectant planning, present resources could be focused on preparing to use, cost-effectively, the much greater resources that could become available in a future crisis-expectant environment.

This approach contrasts with the annual augmentation of shelter spaces by which civil defense readiness was measured in the 1960s. While not ignoring incremental increases in physical facilities—for example, marked and provisioned fallout or blast shelters—this approach would emphasize organization-building, public education, training, and planning for a future surge in civil defense activity.

Defining Civil Defense Requirements: Impacts of Crisis Relocation Planning

The Crisis Relocation Planning (CRP) effort of the mid to latter 1970s has introduced an increased awareness of the sheer complexity of the civil defense operation which would be prepared during a crisis-expectant period. CRP was developed to cope with an environment in which more, and more destructive, weapons now mandate either blast shelter protection or extensive evacuations to host areas with adequate fallout shelter. Civil defense, which had been focused on in-place fallout sheltering, could not afford blast protection and perforce opted for a Crisis Relocation of some two-thirds of the population, who would then seek to improvise host area fallout shelter as the crisis unfolded.

This doctrine of strategic evacuation, then, trades off a greater move-to-shelter time in order to position the population farther from detonations, where relatively inexpensive and more readily improvised fallout shelter could suffice. But the CRP option also increases and makes manifest the complex management and organizational tasks of a civil defense operation. The shelter-oriented civil defense of the 1960s sought a rapid and short move to shelter in response to attack warning, followed by shelter habitation in a clearly dangerous outside environment. Even granting the technical nature of fallout and radiological defense, the thoughts and actions required of most people were bounded and decidedly limited, their alternatives were circumscribed, and the desired posture was a temporary society of countless small and isolated groups.

CRP scenarios, on the other hand, envision a growth of tensions and stress, perhaps a conventional conflict, a possible Soviet evacuation, and negotiations at the brink of all-out war. Under these conditions, some 145 million American evacuees must be allocated across host communities, organized, supported, commuted to essential jobs, and prepared to take shelter upon warning. The resulting managerial, organizational, and guidance responsibilities are imposing. Collectively, these responsibilities represent the cost—in resources, in complexity, and in uncertainty—that we pay to avoid or postpone the relatively large current financial investment that would otherwise be required to develop a blast protection system and the simpler civil defense management system that such a system would entail.

To crisis-expectant planning, CRP can contribute a detailed description of the organization that must be built up through successive phases of a crisis-expectant period. For example, CRP Reception/Care guidance for host areas now provides a detailed map and table of organization which can be used to depict, for any host community, many of the specific jobs and tasks involved in a large-scale hosting operation. If this guidance is applied to develop a plan for a particular host county or town, that local plan should include a map of all neighborhoods, a headquarters location for each subarea, an organizational and staffing chart for each headquarters, at least a general job description for each position in the future hosting organization, and probably a listing of the individual facilities which could be used to house, feed, and shelter both evacuees and the local population. Such detailed plans can be developed for any community, and the CRP work

provides the conceptual frame for similarly concrete descriptions of many other components of a working civil defense operation.

But such plans will remain largely on paper in the foreseeable future, and most will not attain their potential levels of specificity. During a crisis-expectant period, planners, government officials, and an array of other participants would confront the problems of completing the plans, defining organizational structures, recruiting personnel to staff the relocation effort, and then adjusting the organizational buildup to reflect both strategic considerations and the public reaction to them. Crisis-expectant planning is concerned with how we can best anticipate and prepare for an effective use of people and resources in such a period.

Project Tasks

The concept of crisis-expectant planning has emerged from civil defense research and planning efforts concerned with public attitudes toward disaster, the reactions of people as a crisis unfolds, the communications and public education requirements implied by those reactions, and all of these topics as they would affect the design and implementation of the Crisis Relocation guidance and plans now being developed. In the case of our work at Human Sciences Research (HSR), this context for the development of crisis-expectant concepts has included:

1. Development and refinement of the Reception/Care guidance for organizing host communities receiving large evacuee populations.
2. Development of the Organizational Relocation concept and initial guidance for relocating intact organizations (employees plus dependents) to predetermined facilities in host areas.
3. On-site observation and follow-up debriefings and reporting on the "crash" evacuation planning effort during the emergency at Three Mile Island.
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The first chapter of this summary report reviews the findings and conclusions of these tasks as they relate to the emergence of the crisis-expectant planning concept.

Implications of the Crisis-Expectant Concept for Emergency Management

The second chapter reviews selected contributions to the formulation of a crisis-expectant approach to civil defense and disaster-preparedness planning. Such a formulation should reflect the major divergent approaches to civil defense (notably, sheltering versus evacuation-plus-sheltering), and should realistically emphasize organizational and management requirements of the massive operation which might eventually be attempted. Given the assumption of public indifference followed by alarm (or by disciplined or spontaneous public action), crisis-expectant planning should focus on the set of knowledge-building and knowledge-dissemination strategies which can contribute to a maximally effective *organized* response to an unfolding major crisis. "Organization," here, refers ultimately to the management of the entire population by an extensive standby emergency system. The crisis-expectant approach to civil defense should integrate and combine organization-building with public education, seeking a community-based civil defense capable of rapid enhancement to cope with a multiplicity of hazards, including ultimately the challenges of in-place sheltering or relocation in a nuclear crisis.

Emergence of a Crisis-Expectant Approach to Training and Education	23
Development of Knowledge-Dissemination Strategies	25
Synthesizing the Organizational and Education/Training Approaches in a Crisis-Expectant Framework	28
A CRISIS-EXPECTANT APPROACH TO EMERGENCY MANAGEMENT	
Some Implications and Next Steps	29
Nuclear Defense Options	32
Further Development of a Crisis-Expectant Program.	34

TABLES AND ILLUSTRATIONS

1. Host County R/C Jurisdictions and Facilities	15
2. County R/C Organization	17
3. Organizational Assignment Form	22
4. Selected Factors Accounting for Variance in Public Response and in Resulting Casualties	35

**EARLIER REPORTS AND PRODUCTS PREPARED
UNDER CONTRACT DCPA-01-78-C-0193**

William W. Chenault, *et al*, *Evacuation Planning in the TMI Accident*. McLean, VA: Human Sciences Research, Inc., 1980. FEMA No. RS-2-8-34.

Cecil H. Davis and Chenault, *Reception and Care Planning for Widely Dispersed Populations*. McLean, VA: Human Sciences Research, Inc., 1980.

**Emergency Management
Interactive Research Symposia**

1. Chenault and Davis, *Organizational Relocation*. Vol. II of *Implications of Organizational Relocation to FEMA Programs and to the Preservation of United States Industrial Capacity*. Proceedings of Interactive Research Symposium No. 1, convened 19-20 November 1980 at the Emergency Management Institute, Emmitsburg, MD.
2. Chenault and Davis, "Reception/Care, Shelter, and Emergency Welfare Services," in [Chenault, ed.], *The Phased Mobilization of Resources to Shelter and Support Relocated Populations*. Proceedings of Interactive Research Symposium No. 2, convened 5-7 May 1981, at the Emergency Management Institute, Emmitsburg, MD. Washington, D.C.: Federal Emergency Management Agency, 1981. A presentation and resource paper delivered at the meeting as part of HSR's technical support and editorial work for the second Symposium.

Other Products

Chenault, "Civil Preparedness Activities in the Harrisburg Crisis." Harrisburg Reports Nos. 1 and 2, April and May, 1979, describing HSR's on-site observation and after-action debriefings of emergency management personnel; presented to FEMA executives working with staff of the Kemeny Commission.

Chenault, "Reception/Care and Organizational Relocation Guidance." Presentation to the Management Conference for the Radiological Defense Officer Program at the Emergency Management Institute, Emmitsburg, MD, 22 September 1981.

Chenault, "Review Comments" on R.A. Levit, *et al.*, *Behavioral Aspects of Fallout Shelter Stay*, four volumes of BDM Corporation interim reports dated May-August 1978, delivered to FEMA 16 February 1979.

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DEVELOPMENT OF THE CRISIS-EXPECTANT PLANNING CONCEPT

This chapter reviews the several tasks pursued under this contract and describes the development of the crisis-expectant planning concept as it related to those tasks.

Project History and Overview

Prior HSR work involving the CRP Reception/Care Guidance and Organizational Relocation led FEMA to commission a study of Reception/Care planning for widely dispersed populations in April 1978. Defense Department officials had questioned whether an enemy might re-target to strike at the relocated population, and FEMA planners wished to establish whether a still more thinly dispersed population could be organized and supported by using the Reception/Care and Organizational Relocation guidance previously developed by HSR.

At that time, it had become apparent that the Reception/Care and other CRP guidance implied the development of a very large emergency organization to implement CRP. Such an organization would have to be constructed and staffed only after the public had perceived a highly threatening situation. Civil defense research staff—most notably, Ralph L. Garrett—therefore requested an exploratory analysis of social science concepts which might apply to, and inform, the planned development of a large-scale civil defense effort in a threatening future environment. This task was contracted to HSR in September 1978, and the initial work proceeded alongside the examination of widespread dispersal.

The “uncontrolled release” at Three Mile Island on 30 March 1979 provided an opportunity to study many aspects of an evacuation planning effort under conditions of perceived crisis. HSR’s on-site observations began that same evening, and this activity led into the tasks of debriefing FEMA and other participants, preparing reports on crisis management for Agency officials working with the Kemeny Commission, and producing the final report on *Evacuation Planning in the TMI Accident* (RS-2-8-34, January 1980).

The TMI experience, as well as the final report on Reception/Care for dispersed populations (March 1980), underscored the importance of bringing preplanned organizational and operational concepts to a crisis-induced evacuation planning exercise. In August 1980 the Agency contracted with HSR to continue its examination of the crisis-expectant concept, emphasizing the communication process required to mobilize the public through successive periods characterized by increasing levels of tension and heightened awareness of nuclear threat. How should national contingency plans be designed to produce a phased mobilization of citizens as threat perception led to greater public interest and participation?

To this point, the crisis-expectant work had been focused on the behavioral and communications principles which would be reflected during the development of a crisis environment—principles which were also addressed in the concurrent work of Ronald W. Perry at Battelle and Bela H. Banathy at the Far West Laboratory. But it was also apparent that the organizational format for a Crisis Relocation would be a critical anchor in the development of crisis-expectancy planning. That is, as the public and their leaders become interested in civil defense activity, they must be educated to play appropriate roles in the large emergency organization implied by CRP. This organizational aspect of crisis-expectant planning became the focus of HSR's inquiries into the subject. The structure of a host community following relocation, as developed in the Reception/Care guidance, became one point of departure for conceptualizing a phased effort to create and staff an emergency organization as a crisis unfolded.

Organizational relocation represented one (partial) approach to the mobilization of the general public. This concept, developed by HSR and tested by North Carolina and the Boeing Company, would relocate entire organizations as intact units, thereby retaining their organizational capacity while reducing the demands placed on emergency systems in host areas. The concept offers an important vehicle—the existing non-emergency organization—for orchestrating a buildup of emergency systems. In November 1979, at an Interactive Research Symposium on the subject of Organizational Relocation, FEMA and HSR staff began the process of presenting the crisis-expectant concept to an audience of civil defense professionals at the Emergency Management Institute.

By May 1981, FEMA's Research and Training/Education units were prepared to devote the Second Interactive Research Symposium exclusively to the explication of the crisis-expectant concept. FEMA research staff led the Symposium participants through discussions of the concept and numerous of its ramifications, using background papers prepared by Dr. Perry, Dr. Banathy, Mr. Roy Popkin of the American Red Cross, and Dr. John R. Christiansen of Brigham Young University. HSR staff members elucidated the concept by reference to the Reception/Care requirements for organization and personnel—requirements which would necessarily be met as a crisis unfolded and a more responsive public could be initiated into the required emergency roles and jobs.

Emergence and Implications of the Crisis Relocation Option

The research tasks described above addressed critical problems of crisis relocation and provided the context in which crisis-expectant planning was defined as one feasible approach to solving those problems. This section briefly describes the evolution of CRP from a general strategy toward an operational plan. It traces the development of CRP requirements that gave rise to crisis-expectant planning as an approach to meeting those requirements.

Crisis relocation or strategic evacuation—as a complement to in-place sheltering—was revived by Federal civil defense officials in the early 1970s. Initially, the argument for the evacuation concept revolved around (1) its potential effectiveness in an era of more destructive warheads coupled with (2) its potential economic feasibility given the prospect of modest civil preparedness expenditures in noncrisis periods. The thermonuclear warheads of the 1970s and 1980s dwarf those of the preceding decades and sharply reduce the effectiveness of fallout shelters located in areas of probable targets and densely concentrated population. Notwithstanding this greater vulnerability, American public attitudes cannot be counted on to support the \$60-100 billion expenditure that would be required to provide in-place blast shelters for the populations in the higher-risk areas of the country.

Accordingly, civil defense policy makers and planners in the early 1970s began exploring the ramifications of population relocation—evacuating, hosting and sheltering at-risk populations in adjacent lower-risk host areas. Since the Soviet Union had adopted just such an approach to evacuation-plus-fallout-sheltering, an American relocation plan offered the potential benefit of “matching” Soviet escalation through an additional stage of crisis negotiations. A crisis relocation option, then, could be used to circumvent a shoot-or-surrender dilemma which might otherwise be posed by a Soviet evacuation.

This American option was labelled a “strategic evacuation” or crisis relocation to reflect certain assumptions and to distinguish it from the “tactical” evacuation plans of the 1950s. Whereas the earlier evacuation doctrine was geared to emptying the cities while bombers approached, CRP assumes a preattack preparedness period of several days—coinciding with the final phase of crisis negotiations or perhaps the time required for a Soviet evacuation. This assumption, which does not accommodate the “out of the blue” barrage, offers to planners the advantage of an assumed execution period and to policy makers the disadvantages of any such assumption about an enemy’s actions. These pros and cons of the strategic evacuation policy have been debated extensively in the civil preparedness community. For present purposes, suffice it to note that CRP relies heavily on the assumption of an escalating preattack crisis. The same assumption is also central to the crisis-expectant planning concept which later emerged from the consideration of CRP.

Once adopted, the crisis relocation option prompted research and planning studies which have been, or can be, very important to the development of a good comprehensive picture of what nuclear civil defense entails. Those studies which are more or less “unique” to CRP (as opposed to the generic problems of nuclear civil defense) have focussed on the feasibility of, and best operational approaches to, the problems of:

- (1) moving at-risk populations;
- (2) hosting and supporting and organizing evacuees;
- (3) sheltering evacuees.

The movement studies have addressed the problems of managing and directing a mass exodus, have considered the capacity of transportation arteries and systems, and have dealt (less successfully) with the communications and motivational aspects of triggering an evacuation. The hosting studies have included the HSR work on the allocation and management of evacuees in host areas, as well as numerous studies of particular host area population-support functions (food distribution, public safety, health, etc.). The shelter studies have assessed the availability of host area fallout shelter spaces and—more importantly—have focused on the mechanics of constructing or upgrading and ventilating *expedient* shelter during a preattack crisis period, including a period following a crisis relocation to host areas.

These studies and topics are all notable for their *organizational* implications. In each of these problem areas, researchers and planners must eventually contend with the fundamental operational problems of a massive population movement and temporary resettlement. The organizational requirements are immense and much less “avoidable” than is the case with in-place sheltering. The emotional climate would be intense. The most routine life functions would be performed under unusual circumstances. A large-scale civil defense organization, reaching down to the lowest levels of the general population, would be required. Even if such an organization “grew out of” the threatened communities during a crisis, its need for consistent and predictable functioning across communities is apparent. Finally, the staffing of such an organization would be largely on a volunteer basis, with perhaps little pre-crisis preparation on the part of its functionaries.

CRP, then, makes explicit the requirements to elicit public cooperation, enlist and train a large staff, and operate a civil defense organization which reaches down to the lowest levels of community and social organization. How effectively could existing emergency, public, and private organizations be shifted to support such an effort? How rapidly could the new emergency systems be formulated, staffed, and deployed? Through what process should the normally complacent public be recruited into emergency functions and trained to perform them?

Crisis-expectant planning emerged in this context as an attempt to be realistic about the probable evolution from a state of complacency—and a comparatively miniscule emergency organization—toward a condition of desperate concern over survival and a complex requirement for a large functionally organized disaster-response effort. It is not assumed that time would always permit such a transition, only that there is a maximally effective way to employ the energies and resources that would become available in any crisis-expectant period.

CRP, by stimulating attention to the population-management and emergency-organization problems, has contributed substantially to the larger domain of preparedness thinking and planning. Strategic evacuation precludes many of the relatively simple assumptions and approaches which appeared in the shelter-focused civil defense of the 1960s. The earlier in-place fallout protection program allowed and encouraged a focus on a handful of fundamental requirements for survival. It was assumed that a general warning message would cause the public to cluster in nearby protective facilities. Thus, the crisis-response activity generated innumerable small groups which, individually, would organize themselves and implement designated shelter management, radiological monitoring, and other survival activities. In fact, of course, nuclear civil defense was even then a complex organizational problem. But inescapably, its focus was on small groups interacting in isolated settings.

CRP, by contrast, allows no escape from the organizational complexities of a nuclear emergency response. True, a crisis relocation leads toward the same fallout-sheltered condition—only in shelter do people survive the lethal effects of nuclear weapons. But first, people must be motivated to move. They must be convinced that an effective host area support and shelter capability will exist. They must be channelled to appropriate reception areas, then allocated across the facilities in a new community or provided with expediently developed protection. For the duration, or until an attack, the population is organized into essentially new communities instead of circumscribed small groups. Extensive societal activity and interaction continue. In fact, up to the arrival of fallout, the public are expected to continue as workers and consumers, albeit under sharply changed conditions of living and interacting. Whereas civil defense had formerly sought a static configuration of a society in shelter, it now contemplates first setting the entire society in motion, then effecting a move to shelter if events require it.

Such a total mobilization has scarcely been approximated in the American experience, and it would be implemented by people operating under the severest stress. By making this operational and organizational challenge explicit, CRP has contributed substantially to our appreciation of the civil defense mission.

The following sections consider the specific responses to the CRP challenge that have given rise to the concept of crisis-expectant planning. Emphasis is placed on the Reception/Care guidance for organizing host communities, the Organizational Relocation guidance developed to alleviate that problem, some refinements of these approaches as developed under the present contract, and finally the educational technologies and behavioral science research undertaken to support the organization-building efforts required by CRP.

Reception/Care Organization for Host Communities

In 1973 the Defense Civil Preparedness Agency (a predecessor to FEMA) initiated studies by HSR to assess determinants of the hosting capacity of nonmetropolitan communities. By late 1976, the studies had led into the development of a prototype guidance for organizing host areas and finally to the Agency's official *CRP Guidance on Reception/Care Planning for Host Communities* (two volumes; CPG-2-8-14 and 15, October 1977; published as four volumes by HSR in 1976). This work drew on the extensive planning and research literature of civil defense in the tactical evacuation era of the 1950s, as well as the public welfare guidance for mass care in large disaster-stricken populations. Adopting these guidelines and experience to the CRP circumstances, the HSR guidance defined:

1. a detailed organizational structure for organizing host county and community-level services in the areas of congregate lodging, home-sharing, feeding, registration of evacuees, and a variety of special-service areas involving handicapped, infirm or other populations with special needs;
2. a planning format for use in preparing a detailed county or sub-county plan for host communities receiving large evacuee populations;

3. step-by-step instructions for using this "fill in the blanks" format to construct a Reception/Care Plan for any host community;
4. modules of training content, drawn from the above materials, which should be used before or during a crisis relocation operation to instruct specific emergency staff members in the execution of their functions and jobs in the local Reception/Care organization.

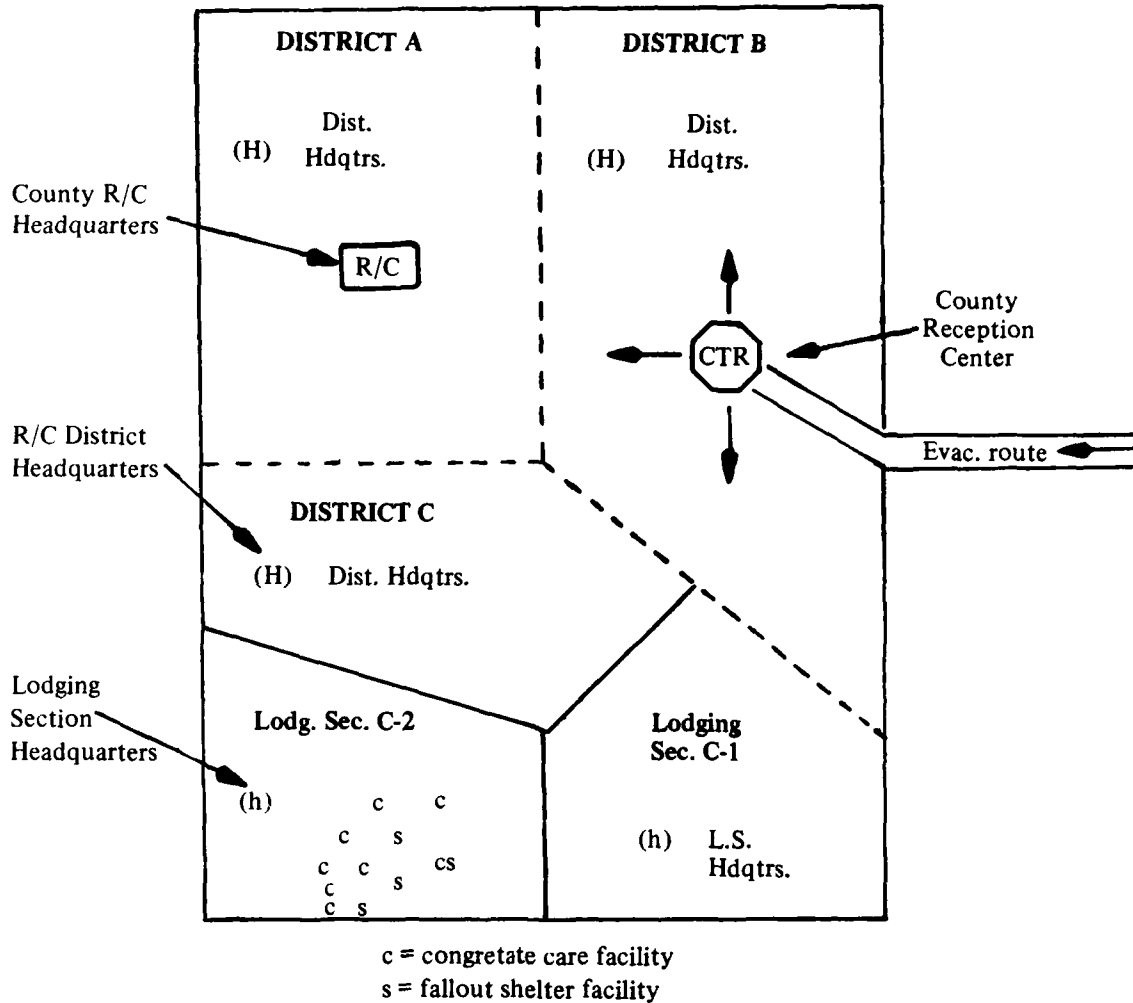
Host Area Organization. The organization of host counties and communities proceeds from the planned allocation of evacuees and the new population distribution that is created by this allocation process. Briefly: The host county is surveyed to determine (1) the best available and the most readily upgradable fallout shelter facilities and (2) the best available congregate care facilities. (To the extent possible, congregate care facilities are "paired" with shelters so that preattack evacuees and host area residents can proceed as quickly as possible to shelter if an attack occurs.) The host county's residents are allocated shelter spaces; then, the county's quota of evacuees is assigned to remaining spaces based on their desirability. In a number of host areas, of course, fallout shelter spaces would be inadequate; in those cases, evacuees would be allocated to congregate care facilities and would seek to upgrade fallout shelter before an attack occurred. This allocation process produces a new population map of the county's resident-plus-evacuee population, which may exceed the normal population by a ratio of three to one or more.

The Reception/Care (R/C) organizational structure is then applied to this new configuration of the population. (Schematic on page following.) The county is divided into R/C Districts of approximately 10,000 people, and each District is divided into Lodging Sections of approximately 2,500 people. An R/C headquarters facility is designated for the County, each District, and each Lodging Section. The R/C map of the host county indicates these headquarters and the individual congregate care and fallout shelter facilities in each R/C jurisdiction.

In the event of a relocation, evacuees would enter the county along designated routes, proceed to one or more Reception Centers, and there be allocated to the next-best congregate care facility. (Depending on local circumstances, volunteered private homes and basements may also be included in the R/C Plan.)

Figure 1

HOST COUNTY R/C JURISDICTIONS AND FACILITIES



Reception/Care Organization. The R/C guidance presents a table of organization and staffing reaching down from the County level, through the District and Lodging Section Headquarters, to each congregate care and shelter facility. The principal elements in this structure are defined by reference to (1) the above hierarchy of R/C jurisdictions and (2) the specific R/C functions required to minimally support the host-plus-evacuee population. These functional elements fall into five categories, which also define the critical services provided by the R/C Service during a crisis relocation.

1. **Lodging-Shelter:** the management and upgrading of congregate care facilities and fallout shelters.
2. **Feeding Service:** providing meals at fixed and mobile feeding stations.
3. **Registration/ Information:** registering evacuees; tracing missing persons; monitoring the population; etc.
4. **Special Services:** for dependent, aged, infirm and others needing special supports or facilities.
5. **Personal Services:** ranging from operation of animal shelters to provision of emergency clothing, supplies, etc.

Staff providing these services would operate primarily at the District and Lodging Section levels, with necessary supervisory and technical functions at the County R/C Headquarters and appropriate field staff in congregate care facilities, shelters, residential neighborhoods, feeding units, and special facilities such as orphanages, rest homes, and animal shelters. The diagram on the following page indicates how a fully operational host county R/C operation might be organized and staffed. (This "ideal" view of R/C organization and operations represents, of course, only the desired goal of R/C planning for a situation which would, at best, be somewhat confused, tense, and variable across host jurisdictions.)

Staffing Implications. From even this cursory outline of an R/C structure, it is apparent that a substantial organization would be built up before or during a crisis. For example, a host county of 30,000 residents, receiving 60,000 additional evacuees, might be organized into nine R/C Districts composed of 36 Lodging Sections. Above the facility and shelter level, such a county R/C organization could require 17 or more staff at the county level, approximately 65 per District (585 per nine districts), plus 36 Lodging Section Supervisors—some 638 people. To these might be added approximately 100-120 Facility/Shelter Managers and Lodging Aides, and perhaps 300 radiological defense and other functionaries operating within congregate facilities and fallout shelters. Over 1,000 people would be staffing and operating a R/C organization for 90,000 host area residents and evacuees.

Figure 2

COUNTY R/C ORGANIZATION

County Headquarters

R/C Coordinator

Director: Shelter Planning,
Allocation, Upgrading

- 4 Assistants (minimum)

Director: Auxiliary
Services (public info., etc.)

- 3 Assistants

Dep. Coord: Operations

- Ass't: Lodg./Shelter
- Ass't: Food Services
- Ass't: Regis./Info.
- Ass't: Spec. Services
- Ass't: Pers. Services

Dep. Coord: Reception Ctrs

- 1 Ass't. per Center

District Headquarters

District Manager

- 2+ Assistants

Super:
Spec. Serv.

- 3 Ass'ts.
- 2 Ass'ts. per
Lodg. Sec.
- 1 Ass't. per
Spec. Facility

Special
Facilities

Super:
Food Serv.

- 2 Ass'ts.
- 1 Ass't. per
Feeding Station

Feeding
Stations

Super:
Lodg./Shelter

- 6 Ass'ts.

Super:
Regis./Info.

- 3 Ass'ts.
- 4 Ass'ts. per
Lodg. Section

Super:
Pers. Serv.

- 6-9 Ass'ts.

Special
Facilities

Lodging Section Headquarters

Dep. Super: Lodg. Sect.

Manager:
Congregate Facility
and/or Shelter
(1 per unit)

- Congregate facility staff
- shelter staff
(radiological defense, etc.)

Lodging Aides
(several per neighborhood,
1 per block, etc.)

Maintaining these ratios for an evacuee population of 145 million, plus host area residents would result in a Reception/Care/Sheltering organization of something over 2 million—that is, about one emergency jobholder for every 65 or 70 evacuees to be relocated, reorganized, housed, fed, cared for, moved to shelter, and sheltered.

Given the magnitude of the relocation task, these figures are not particularly surprising. But they do raise challenging questions about how such a large organization would be built up, staffed, and trained before or during a crisis. The R/C guidance itself anticipated a gradual buildup from a "core" staff to an organization that would become "complete" only as its mission became imminent. Thus, the guidance suggests five levels of staffing which would, for a county like the one illustrated above, be staffed by three R/C officials during a peacetime planning phase. As public interest allowed, or threatening events precipitated, the staff could be increased by stages to 10, to 22, to 54, and finally to some 200 on the eve of an operation. The remainder of the designated slots would be filled during a relocation operation, drawing many recruits from the evacuee population itself as these people were assigned to host area facilities.

Notwithstanding this device for minimizing the R/C staffing requirement, however, the organizational, recruitment, and training implications of the crisis relocation mission were manifestly larger and more complex than civil defense had heretofore reckoned. For those who accepted the logic of a large-scale organizational requirement, the next steps were to seek:

1. methods for reducing the organizational requirement, and
2. methods for meeting the implied staffing and training requirements imposed by CRP.

The first of these efforts revolved around the concept of organizational relocation, while the second evolved toward crisis-expectant planning as a means of anticipating and responding to such an organizational and educational challenge.

Organizational Relocation

The concept of organizational relocation emerged from HSR efforts to assess the hosting capacity of reception areas,* as well as prior civil defense experience with industrial preparedness programs and the longstanding civil defense concern with utilizing "key workers" during a major emergency. As defined in "optional" CRP guidance, organizational relocation means the relocation of intact employing organizations—both employees and their dependents—to predesignated host area locations. The advantages of this approach, as opposed to mass evacuation movements by the general population, include:

1. The maintenance of organizational capacity through pre-, trans-, and postattack periods—when many factors would operate to break down and destabilize normal patterns of work, consumer behavior, communication, and social organization.
2. The transference of organizational capacity from risk to host areas, reducing the hosting burden on reception-area communities and offering organized manpower to the hard-pressed emergency organizations in host areas.
3. Facilitating continued organizational activity required to protect and recover industrial resources, and simplifying the task of continuing essential production and service functions during a preattack relocation period.
4. Improved population control with respect to orchestrating or phasing the evacuation movement, the post-evacuation commuting process, and the management of the population through all phases of an emergency.
5. Increased credibility of relocation directives, resulting from the specificity of organizational relocation messages (for organizational evacuees) and the implied seriousness and concreteness of the relocation effort (for nonorganizational evacuees).

*Gay and Chenault, *Crisis Relocation: Distributing Relocated Populations and Maintaining Organizational Viability* (McLean, VA: Human Sciences Research, Inc. 1974).

These and other advantages of organizational relocation are spelled out in more detail in Chenault and Davis, *Organizational Relocation*,* and have been evaluated favorably in two major assessments of the concept by the Boeing Company and the State of North Carolina.** From the perspective of Reception/Care planning, the advantages are most immediately apparent in (1) the reduction of the burdens associated with assigning, processing, and managing evacuees and (2) the pools of already-organized manpower which are potentially available for use in host area emergency operations.

These advantages are readily illustrated by contrasting the movement processes which would characterize nonorganizational and organizational evacuees. Thus:

Nonorganizational Evacuees or the general public: With or without prior preparation, risk area residents would be assigned by neighborhood to planned evacuation routes. Filing out of the risk area along these routes, they would be channeled to host county Reception Centers. Upon arrival at the Centers, they would be assigned on a first-come, first-served basis to the next-best available congregate care facility (and its associated fallout shelter). Arriving at the facility, they would be assigned specific living areas by host area personnel, who would proceed to instruct them concerning intra-facility regulations, emergency procedures upon receipt of a take-shelter warning, and the availability of emergency services (food, etc.). Host area emergency personnel—notably, the Facility Manager, would seek to recruit intra-facility staff from among the newly arrived evacuees.

Organizational Evacuees. Before or during a crisis buildup, these employees and their families could know their specific relocation destination and route, and (potentially) the exact role they would play while the organization is relocated. They would immediately encounter known peers and authority figures in the relocation facility, and could be assigned as a unit to positions or tasks in the host area Reception/Care organization. Commuting to a risk area facility would be organized by the group itself, and non-commuters would operate in a structure at least partly familiar. Host area emergency officials would interface with the already designated leaders of the organization, rather than seek to organize a recently, randomly assembled group of families under severe stress.

* (McLean, VA: Human Sciences Research, Inc., 1978)

** Ralph L. Garrett, ed., *Implications of Organizational Relocation to FEMA Programs and to the Preservation of U.S. Industrial Capacity in the Proceedings of the Emergency Management Institute Interactive Research Symposium No. 1* (Emmitsburg, MD: FEMA, November, 1981; William C. Dobson, Jr., and Edwin H. Harris, Jr., *Organizational Relocation: A Field Perspective* (Raleigh, NC: North Carolina Department of Crime Control and Public Safety, 1980); M.C. Christopherson, et al., *Refine Pilot Industry Organizational Relocation Plan Guidance* (Seattle: Boeing Aerospace Company, 1981.)

Depending somewhat on the organization of the risk area economy, from 20 to 40 percent of the population could—via organizational relocation—be removed from the mass-evacuation groups which must be reorganized and put into an already-organized population better prepared to support emergency operations and self-help activities. Under most foreseeable circumstances, furthermore, the organizational evacuees with predesignated host area facilities could be used to regulate the movement process itself. That is, designated organizations could be given staggered movement times, and in some cases these could be changed during the relocation either to stimulate more timely movement or to slow the outflow over available routes.

Phased Development of Organizational Relocation Plans. Because crisis-expectant planning concepts were already being discussed in civil defense circles, the organizational relocation guidance was written to accommodate the probable evolution from low-priority planning to an urgent crisis-period effort. Thus, under normal or precrisis conditions, risk area organizations could be assigned to predesignated host facilities, while even rudimentary host area plans could include lists of these organizations, estimates of their work forces (with dependents), and a designation of the facilities they would use.

In the event that increased international tension should lead to more intensive planning, risk area organizations would be encouraged to prepare brief "summary" relocation plans, including the detailed "organizational assignment form" illustrated on the following page. Copies of these forms would then be inserted in the appropriate risk jurisdiction's Reception/Care plan. In a final stage of preparation, or during a relocation operation, organizations would develop detailed plans covering movement, hosting, commuting, participation in host area emergency actions, etc., while more detailed reception-area plans would incorporate these organizational roles.

Reception/Care Refinements for Wider Dispersal of Evacuees

The Crisis Relocation requirements for emergency organization of the population become noticeably greater and more complex if risk area evacuees are distributed more thinly across the outlying jurisdictions. This was the essential conclusion of this

Figure 3
Organizational Assignment Form
(Illustration)

page _____	
<p align="center">ORGANIZATION</p> <p>Name _____</p> <p>Address _____</p> <p>Phone () _____</p> <p>Official _____</p> <p>No. Employees _____ No. Dependents _____</p> <p>H__C__O__</p> <p align="center">TOTAL EVACUEES </p>	<p align="center">HOST JURISDICTION</p> <p>County _____</p> <p>Division _____</p> <p>R/C District _____</p> <p>Lodging Section _____</p> <p align="center">Lodging Section Office</p> <p>Building _____</p> <p>Address _____</p> <p>Phone () _____</p>
<p align="center">RELOCATION HEADQUARTERS</p> <p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p>	<p align="center">COMMENTS</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
CONGREGATE LODGING	
<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p>Capacity _____ No. ASSIGNED </p>	<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p>Capacity _____ NO. ASSIGNED </p>
FALLOUT SHELTER	
<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p>Spaces _____ Spaces after Upgrading _____</p> <p align="center">NO. ASSIGNED </p>	<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p>Spaces _____ Spaces after Upgrading _____</p> <p align="center">NO. ASSIGNED </p>
CONGREGATE FEEDING	
<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p align="center">NO. ASSIGNED </p>	<p>Building _____</p> <p>Address _____</p> <p>Phone () _____ Building No. _____</p> <p align="center">NO. ASSIGNED </p>

contract's study of wider dispersal and its implications for the Reception/Care and organizational relocation guidances.

The Crisis Relocation plans tend to distribute evacuees in disproportionately greater numbers to the larger host area communities—i.e., those small cities, towns, and trade centers in which nonresidential buildings and facilities are normally concentrated. This distribution is a natural result of the effort to utilize large nonresidential facilities and take advantage of the better developed infrastructures found in more densely populated host jurisdictions. This result of the CRPs led Defense Department and civil defense officials to question whether a more thinly distributed evacuee population might produce higher survival rates, particularly in the (very unlikely) circumstance in which an enemy might attempt to retarget weapons to strike the evacuated population.

As part of an effort to assess this contingency, HSR was contracted to examine the implications of wider dispersal for the Reception/Care and organizational relocation guidances previously developed and reviewed earlier in this chapter. The results of that study are presented in the final report on *Reception and Care Planning for Widely Dispersed Populations** and may be summarized briefly here.

1. Wider dispersal of evacuees involves serious reductions in usable congregate care and shelter space, necessitates greater reliance on the use of volunteered private residences, reduces the capacity to care for dependent populations requiring special consideration or support, and imposes more difficult requirements for distributing consumer goods, operating risk area facilities, and upgrading or providing fallout shelter.
2. The Reception/Care guidance provides a suitable, adaptable approach to this more difficult problem, but with substantially greater needs for emergency staff and precrisis planning.
3. Organizational relocation becomes a still more important means for retaining organizational capacity in the thin-dispersal mode.

By and large, then, the wide-dispersal option would tend to reduce the society's capacity to protect its people following a Crisis Relocation. For present purposes, however, the most significant finding is this study's reinforcement for the position that an extensive emergency organization would be needed by the time disaster would strike.

*Davis and Chenault (McLean, VA: Human Sciences Research, Inc., 1980).

Emergence of a Crisis-Expectant Approach to Training and Education

While HSR and other researchers worked with civil defense planners to elaborate the organizational implications of CRP, a second FEMA research thrust was directed toward the problems of training and public education in a nuclear emergency. Ronald W. Perry, Bela H. Banathy, and other experienced students of disaster behavior were developing a systematic strategy for identifying a survival knowledge base and, more importantly, for communicating the requisite skills to a population variously affected by the emotional and attitudinal currents characteristic of a developing crisis.

As in the organizational work, the relocation scenario introduced greater complexity into communications, training, and public information analyses originally conducted when inplace fallout shelter was virtually the sole objective of civil defense planning. Much of that earlier work, however, was devoted to the still-relevant tasks of defining behavioral states or domains, inferring necessary survival knowledge and skills, and devising means for communicating the latter in a communications environment characterized by the former.

Behavioral research on the impacts of disaster was supported by Federal civil defense agencies in the 1960s and produced substantial work in such areas as the re-assessment of the historical experience with disaster, individual responses and their implications for emergency management, impacts on organizations, and of course the directly applicable findings concerned with small group living in close confinement.

From the perspective of the CRP scenario, the most interesting of these studies may be those that called to attention the re-prioritization of individual values that marks the disaster syndrome. As primary attachments to personal survival, family, and perhaps possessions become salient, a host of secondary affiliations may be corresponding degraded or minimized. Would producing or distributing organizations continue to function if their essential tasks were associated with large systems whose meaning was defined outside the boundaries of neighborhoods, localities and communities whose environments presented immediate perceived challenges to the victims?

Such questions were then applicable largely to the postattack reconstitution or recovery periods, after the sheltered small groups emerged to assess their prospects. The preattack relocation problem, as it is probed more thoroughly, may reintroduce such considerations into the analysis of crisis-period, pre-evacuation communications. If we accept the proposition that growing crisis-awareness prompts increased participation in civil defense, must we also project a counter-current, fed by similar emotions, which would associate self-preservation with opposition not to an enemy or the disaster itself but to the growing preparedness response?

A singularly interesting aspect of the 1960s studies was found in extensive surveys of public attitudes and opinions. It was not surprising that surveys revealed consistently high levels of public support for an essentially nuclear preparedness program. Just as consistently, however, this attitudinal consensus was not translated into corresponding extensive actions or government programs. Was this low salience akin to a traditional reluctance to allocate today's money against tomorrow's low-probability disaster? Or did the traumatic prospect of a nuclear doomsday trigger psychiatric blocks against acting on the superficially positive preparedness ethic? And if the psychological impacts were thus, how did the messages differ from those that produce fortunes for life insurers and sometimes unquestioned commitments to offensive weapons regarded as "deterrents"?

At another level, the shelter-focused period in civil defense initiated the extensive analyses which have defined the crucial life-support knowledge which must be communicated to at least some of the inhabitants of each of those eventually isolated shelters. Fundamentally, this work on "shelter management" and "radiological defense" (then, "monitoring") was concerned mostly with technical content, and much less with problems of disseminating the information. But the work was sound, and has since constituted a point of departure for recent studies of the shelter-improvisation, ventilation, and upgrading problems which must be addressed in the Crisis Relocation and crisis-expectant approaches to civil defense.

In concluding this summary of the earlier behavioral, educational, and communications work, it is appropriate to point up an unsolved problem. Though the content of at least the in-shelter work was strong, no successful mechanism was demon-

strated for pervasively disseminating knowledge to the threatened population. Most of the several hundred thousand radiological monitors trained in the 1960s could not be identified a few years later, and no management system was devised for allocating trained operators across the shelters. Civil defense, in an all-out crisis, would have relied largely on standardized emergency public information packages to trigger a move to shelter; shelterees would mostly have learned survival tasks from printed information distributed to shelters, and from broadcast or print media before or during the shelter stay. The training of individual shelterees in specific technical or managerial tasks would have been happenstance.

On the other hand, this shortcoming of the earlier system must be assessed in context of the relatively bounded and simpler task of an in-place shelter system. In many locations where adequate fallout shelter was available to the public, a simple warning message followed by a straightforward move to nearby shelters would have sufficed for millions of people. Once sheltered in a pre-established and adequate facility, most groups could have learned or improvised the shelter-living skills required for several days of confinement. It is in the context of Crisis Relocation—with its requirements for relatively complex and longer-term preattack activity, including shelter improvisation on a large scale—that the absence of a comprehensive training and education strategy becomes a crucial problem.

Development of Knowledge-Dissemination Strategies. "Despite the survival value of civil preparedness information and skills, no comprehensive system exists for providing education and training for the U.S. public either prior to or during a crisis situation."* This judgment perhaps underestimates the educational effects of many existing civil defense measures—for example, the Emergency Broadcast System tapes and pre-packaged newspaper columns that would be used to inform the public about preparedness activities in a nuclear emergency. But it remains true that civil defense has not been able to afford the comprehensive emergency public information program that would be required for an integrated national response to a nuclear threat. To rectify this shortcoming and provide a training system supportive of Crisis Relocation, the Far West Laboratory has

*Bela H. Banathy, et al, *A Model for Education and Training for a Crisis-Expectant Period* (San Francisco: Far West Laboratory for Educational Research and Development, 1980), p.1.

developed a methodology for incorporating survival information in a broader strategy of public education which could be implemented during the successive phases of a crisis build-up. Essential elements of this approach include the definition of content, the analysis of audience characteristics, and the assessment of behavioral and communication factors in the context of an emerging crisis.

The first two of these elements are readily handled by well-established methods. The content materials to be transmitted--knowledge, skills, and behaviors which support survival are inferred essentially from the civil defense work on sheltering, the public welfare work on organizing and managing congregate care, and the requirements imposed by the emergency-response system itself. Target audience analysis (at any given time) is similarly a well understood if complex process of mapping audience characteristics which influence message reception, responses, etc.

The third element--behavioral and communications assessments--takes its departure from emergent norm theory. Essentially, a perceived crisis may present individuals with a situation in which routine thought and behavior processes provided no satisfying definition or direction. A "milling" process ensues as the affected individuals seek definition, structure, and leadership in the changed environment. If the crisis persists and effected individuals continue to interact, the milling process leads toward a new set of agreed-upon definitions and norms. The affected individuals have now essentially agreed on an appraisal of the crisis, threat, and appropriate responsive actions.

Crisis-expectant planning and its associated training and education strategy would take advantage of the milling phenomenon by prepackaging survival information and planning to disseminate it when it is both needed and *desired* by the crisis-affected population. This approach, best defined in several works by Ronald W. Perry, treats civil preparedness plans and appropriate disaster-response procedures as a "*standby mechanism*--that is, CRP and other preparedness efforts represent a definition of threat and a prescription of appropriate responses which would be introduced as the population perceived a crisis and sought ways to cope with it.*

*Perry, et al., *Implications of Natural Hazard Evacuation Warning Studies for Crisis Relocation Planning* (Seattle: Battelle Institute, 1980).

Emergent norm theory is consistent with the application of social science to civil defense in the 1960s, and it indicates more directly the types of information and communication needed by the crisis-responding public. When applied to an oncoming nuclear crisis of nationwide scope, of course, the concept introduces at least as many questions as it resolves. To what extent would crisis perceptions be generalized? Would there be "stages" of such a developing awareness? Would they be different for different groups? The answers are presumably positive, but only in a very generally applicable way. And whatever the opportunities offered by a progressive redefinition of public concerns, there remain the challenging tasks of monitoring these states of mind and responding with appropriate, targetted doses of information.

For these reasons, probably, the developers of the crisis-expectant education and training model have been guided by the concept of emergent disaster-relevant norms, but have followed the traditional building-block approach to public instruction. The thrust of the work is to identify essential elements of survival information, then package these elements in sequentially deployable units or modules. Crisis-expectant planning relies on a developing crisis awareness to stimulate public interest in learning about survival, but wisely does not yet attempt to anticipate specific attitudinal and audience shifts to which civil preparedness communications might respond.

What the model does encompass is an analysis of general public education and function-specific training based on:

1. A comprehensive definition of survival information required in various disaster contexts, including prominently the nuclear disaster and Crisis Relocation scenarios.
2. An index of appropriate activities and behavior responsive to the needs posed by various forms of disaster.
3. The segregation of the above disaster information into blocks of information suitable for dissemination in three time periods: normal, crisis-expectant (short or long term), and tactical warning.
4. Analysis of audience characteristics and behavioral/communications factors affecting the transmission and reception of civil defense information in each time period.

5. The assessment and selection of alternative instructional modes and formats suitable for particular classes of information under the constraints and conditions expected in each time period.
6. Development of a comprehensive education and training strategy which could support the phased buildup of large-scale nuclear civil defense capabilities during a crisis-expectant period.
7. Development of specific educational modules—covering critical content areas and prescribing appropriate instructional procedures—which can be pretested, refined, and deployed on a standby basis.*

Synthesizing the Organizational and Education and Training Approaches in a Crisis-Expectant Framework

The above sections have sketched the development of a detailed organizational format for Reception/Care emergency operations and a comprehensive model for both educating the public and training selected individuals to perform essential emergency functions. Both developments have accompanied the emergence of a crisis-expectancy, phased-buildup approach to CRP. The logical and intended next step is the convergence of these approaches to organization and education in order to:

1. target the educational efforts on reasonably standardized emergency organizational roles and positions; and thereby
2. discipline and restrict the selection of (most) content materials to the performance of critical survival functions in an organizational context; while supporting the effort to
3. recruit and organize the staff of an effective, large management system during a future crisis-expectant period.

Given that Crisis Relocation requires an extensive involvement of, and management of, the population at large, this combination of educational technology with an organizational buildup should and can help to maximize the efficiencies of both efforts. Both organization-building and civil defense education, furthermore, can utilize the crisis-expectant concept to good advantage. The following chapter suggests how a civil preparedness program might incorporate and generalize upon the combination of a comprehensive public education strategy with the development of a broad-gauged standby emergency organization.

*Banathy, *op. cit.*

A CRISIS-EXPECTANT APPROACH TO EMERGENCY MANAGEMENT

Some Implications and Next Steps

The immediate severity* and long-term costs of potential disasters have increased markedly as a function not only of weapons but of many other scientific and social "advances"—for example, the production, distribution, and use of dangerous chemicals. Disaster vulnerability and costs, moreover, are also a function of the increasing complexity and interrelatedness of the society which disaster would strike. Accordingly, we are finding that it is not only in the arena of nuclear war that the demonstrable potential for disaster now far exceeds our capability to enlist public support for a thoroughgoing preparedness program.

A crisis-expectant approach to general emergency management may prove an apt conceptual framework for optimizing the use of limited preparedness resources before a crisis presents itself. In such diverse areas as peacetime nuclear emergencies, public health pesticide programs, the control of chemical hazards, or responses to terrorist actions, we are using a number of "standby mechanisms" which serve to bring in appropriate expertise and resources to back up local disaster-response organizations. The emphasis in such programs is on the side of the technical hazard and the technical response—for example, telecommunications linking experts with the scene—and sometimes on mobile response teams which can augment local forces. However, it is fair to say that such programs are not extensively developed, are frequently restricted to a single technical hazard, and—with the notable exception of a small cadre of FEMA personnel—the programs do not emphasize population management capabilities geared to influencing the public response.

The logical roles for FEMA in such activities include the maintenance of a repository of knowledge about both disaster and its management, coupled with a system for deploying this knowledge in local situations to protect the general public. Communities and their officials badly need a source of assistance which transcends, in normal as well as crisis periods, the particularistic concerns of industries, agencies, and interest groups linked to potential agents of disaster. The deployment of this assistance—

via public education, training, and operational support—may also require a civil defense infrastructure which plays a more central, as opposed to its now peripheral, role in local government.

“Evacuation” is increasingly a disaster-management concern in its own right, as a widening array of hazards present threats for which evacuation is the least expensive and surest immediate response. But evacuation—with its numerous psychological facets—merely illustrates the added complexity and managerial requirements which must be considered when civil defense focuses on “population management during disaster” instead of the traditional functions of policing, firefighting, or other components of “government operating during a disaster.” Given the real limitations on population control capabilities which can be exercised by small emergency organizations, concern with large-scale movements in the population (either directed or spontaneous) implies a greater reliance on public information and education than is found in most existing emergency-response plans.

The exploration of a crisis-expectant approach to comprehensive emergency management could be viewed as a convenient byproduct of the concept's application to CRP. To realize these benefits, the further development of the CRP community organization and public education/training components should include a research and planning element which seeks to generalize from the nuclear plan in the direction of a multiple-hazards capability at the Federal, State, and local levels. Topics to be considered in such an effort would include:

1. Community emergency organization, on a standby basis, for population management—including the directed evacuation of residents, the reception and hosting of both displaced residents and (imported) nonresidents, monitoring and responding to spontaneous population movements, and the full range of services required to mitigate disaster effects by systematically relocating threatened populations.
2. Crisis-expectant public education and training systems, linked with local emergency organizations, which can be used to define hazards quickly and enlist the public in organized emergency responses.

3. A readily accessed knowledge base indexed by types of threat, responsive actions, and methods of communication.
4. Mechanisms and procedures for efficiently monitoring the state of public knowledge, surveying crisis-related attitudes and behaviors, and relating these factors to the selection and timely dissemination of emergency public information and instruction.
5. Methods and procedures for monitoring and controlling or influencing spontaneous population movements triggered by perceptions of crisis, threat, or disaster.
6. Further behavioral analyses of crisis behavior in relation to communications, with a focus on the "stages" of a developing crisis-awareness.

An underlying logic for such a crisis-expectant approach would emphasize the economies which can be achieved when population-management channels public energies into areas which, otherwise, would tax the capabilities of formal emergency organizations. In a large disaster, for example, a well prepared public or local leadership group might temporarily perform many of the emergency services which are normally provided by governmental units now preoccupied with a specific trouble spot. More generally, a comprehensive plan for disaster (of unusual or uncertain dimension) might serve the broad undergirding function which Perry ascribes to CRP. This contingency plan, he notes, provides:

. . . a reasonable blueprint or guideline for *coordinating public response* to threatened nuclear attack. Thus, it affords a plan for continuity of life between pre and post attack environments, and serves as an *alternate social structure* specifically designed to enhance citizen abilities to cope with the contingencies of a changed environment. . . . It is the provision of a social structure—alternate norms for coping with new situations and problems—that makes CRP particularly useful, especially in the context of other (complimentary) civil defense programs.* [Emphasis added.]

*"Human Behavior During Crisis Periods: Crisis Relocation as a Standby Mechanism," paper prepared for the Second Interactive Research Symposium at the Emergency Management Institute, Emmitsburg, MD, (Seattle: Battelle Human Affairs Research Centers, May 1981).

Nuclear Defense Options

Crisis Relocation Planning has been described as an attempt to achieve the legislated civil defense goal of sheltering the public in an era when in-place fallout shelter is less effective and in-place blast shelter is perceived as too costly for the country to support. Crisis-expectant planning continues this logic of cost-deferral (maintaining standby management systems, educational strategies, and operational plans) while recognizing the massive population-management task implied by a Crisis Relocation.

But the costs of nuclear defense, it must be remembered, are *deferred* rather than avoided. Part of those costs, furthermore, take the form of *increased risks* that a more complex managerial system could in fact be implemented in a timely, credible, and effective manner.

The table on the following page was prepared by the author to suggest how various costs and risks compare across nuclear civil defense systems which carry widely varying initial investment costs. The table compares recent (1970s) civil defense with CRP (D' evacuation), a crisis-expectant expedient shelter option, and an in-place blast shelter system, using the following criteria:

1. *knowledge required by the public* to implement survival action;
2. *complexity* of the actions required from the public and the warning message which would initiate those actions;
3. *civil defense organization* required to implement each program, including public education and emergency public information, and the criticality of organizational effectiveness to successful implementation of survival actions by the public.
4. *other factors* useful for comparison purposes, most notably each program's dependence on orderly public action.

In general, the comparisons indicate the obvious point that the relatively high-cost blast shelter system represents the surest life-saving capacity. More importantly, the comparisons

Figure 4
SELECTED FACTORS ACCOUNTING FOR VARIANCE
IN PUBLIC RESPONSE AND IN RESULTING CASUALTIES

	1970s CD	Program D' Evacuation	Expedient Shelters	Dedicated Blast Shelters
Knowledge Base				
Knowledge required to response to "execute" message	Medium	Most	Medium	Least
Knowledge-improvement from program-building	None	Potentially High	Potentially High	Great
Knowledge-improvement during crisis expectancy period	Uncertain	High	High	Most Specific (Best)
Action/Messages				
Complexity of required public action	Worst Case	Complex	Moderately Complex	Simple
Personal skill and "investment" required	Worst Case	High	Very High	Least
Complexity of "execute" (including warning?) message	Worst Case	Complex	Moderately Complex	Simple
CD Organization				
Extent of CD organization required	—	Large	Moderately Large	Moderate
Criticality of organizational effectiveness	—	Critical	Moderately Critical	Moderate
Required investment in CD organization	—	High	Moderately High	Moderate
Minimum acceptable investment in public education	—	High	Moderately High	Moderate
Minimum acceptable investment in EPI	—	High	Moderately High	Moderate
Other Considerations				
Potential to re-use program after false start	Low	Uncertain	Moderately High	High
Potential to sustain protected posture over time	Low	Uncertain	Moderately High	High
Potential to utilize spontaneous public action	Low	Moderately High	Moderately High	High
Potential variation in casualties as a function of public response	Highest	Second Highest	Third Highest	Lowest

*William W. Chenault, "Public Response as a Factor in Assessments of Effectiveness," in Roger J. Sullivan, *et al.*, *Special Civil Defense Needs of High-Risk Areas of the United States* (Arlington, VA: System Planning Corporation, 1979.)

concerned with population management and communications illustrate why CRP—or any deferred-cost approach—requires a relatively sophisticated management, public instruction, and communications capability.

Costs, and risks, in other words, can only be deferred so long. For a crisis-expectant period of substantial duration, the implication is that successively higher investments in civil defense would involve difficult choices between enhancements of the management/education system and a gradual or phased investment in physical blast shelters. Only in the last stage of crisis-expectancy, when costs are considered irrelevant, does this trade-off disappear. By that point, time has become the significant constraint on the investment decision. But throughout the crisis-buildup period, civil defense would require a relatively sophisticated decisionmaking methodology for weighting the alternative investments at each stage of system development.

Further Development of a Crisis-Expectant Program

Civil defense has initiated, or at least conceptualized, numerous alternative approaches to effective survival action in a nuclear emergency. A crisis-expectant, phased-buildup approach to civil defense should incorporate these individual-, organization-, and community-oriented approaches in a comprehensive Nuclear Civil Protection plan. (Current NCP policy is comprehensive, but current plans seldom bring the diverse elements into a common frame.) Specifically, and taking only selected examples:

1. Community-based preparedness plans should spell out a specific organizational format for all hazards, with provision for phasing or scaling up the level of plan implementation to include (a) the full-blown Reception/Care and logistical support plans required for in-place protection and emergency shelter improvisation, or (b) a CRP implementation which includes moving or receiving and organizing large groups of citizens.
2. Public education and training programs should be linked directly to community-based organizational formats—with provisions for increasing the specificity of this cross-reference as community organization takes shape through a crisis buildup.

3. Organizational relocation guidance should include—in prepackaged form—information on hardening facilities and equipment that is now available in civil defense publications. “Organizational self-protection” and emergency organizational procedures should be readily available on a standby basis, and presented in a manner which emphasizes the organization’s role in community-wide risk and host area plans.
4. Technical and job-performance guidance on critical functions (for example, radiological monitoring, shelter improvisation, venting and shelter management) should be integrated into the existing and planned guidance on organizing the population of risk and host areas.

The thrust of these recommendations is to synthesize, coordinate, and interweave the concepts of public organization and public education. The result can be a population and social structure which is demonstrably prepared to maximize life-saving and post-disaster reorganization and recovery.

Such a defensive and survival capability, finally, should prove an effective deterrent or modulator of offensive thinking on all sides of an international negotiating table. By making manifest, or locally meaningful, the complexity and social organizational change implicit in a full-blown response to nuclear threats, a sound crisis-expectant approach to in-place protection and evacuation should automatically have a cautionary effect on this country’s approach to crises. To an enemy, on the other hand, it should signal a rational, calculated intent to utilize public energies to insure survival and recovery. At the last stage of any deadly escalation, the emphasis would be on a largely defensive gesture rather than a dramatic or additional offensive challenge.

These last observations suggest, however, that a crisis-expectant or phased civil defense buildup should be linked into the country’s other major national defense and crisis management systems. A truly organized, locally viable civil defense system would of course be a factor in deterrence policy. Communications in each domain would affect those in the other, and their linkage should be examined closely to insure that it maximizes the mitigating effect which results from serious contemplation of a massive nuclear civil defense operation.

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CRISIS-EXPECTANT PLANNING
FOR CRISIS RELOCATION

October 1981
Unclassified
vi + 37 pages

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Contract DCPA-01-78-C-0193
Work Unit 4821G

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